

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P16833PCT</b>	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/US2004/030993</b>	International filing date (day/month/year) <b>22/09/2004</b>	(Earliest) Priority Date (day/month/year) <b>22/09/2003</b>
Applicant  <b>INTEL CORPORATION</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 3d

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

NO DOCKETING REQUIRED

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/030993

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L23/498 H01L23/538 H01L23/31 H01L25/065

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 300 679 B1 (MUKERJI PROSANTO K ET AL) 9 October 2001 (2001-10-09)	1,2,4,5, 7,13,19, 20,22,23
Y	column 2, line 1 - column 4, line 67; figures 1-5	3,6,11, 12,14, 15,17,21
X	US 2001/040793 A1 (INABA TETSUYA) 15 November 2001 (2001-11-15)  paragraphs '0050! - '0094!; figure 2	1,2,4,5, 7,8,10, 13,16,18
Y	US 6 351 029 B1 (ISAAK HARLAN R) 26 February 2002 (2002-02-26)  column 14, lines 9-67; figures 17-19  ----- -/--	3,6,11, 12,14, 15,17,21

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

1 March 2005

Date of mailing of the international search report

09/03/2005

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International Application No

PCT/US2004/030993

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/020153 A1 (BRUCE TED ET AL) 30 January 2003 (2003-01-30) figure 7 -----	1, 13, 16, 19
P, X	US 2004/104470 A1 (BANG KYONG-MO ET AL) 3 June 2004 (2004-06-03) paragraphs '0034! - '0042!; figures 1-6 -----	19-25
A	US 2001/006252 A1 (KIM YOUNG ET AL) 5 July 2001 (2001-07-05) figures 31, 32 -----	1-25

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/030993

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6300679	B1	09-10-2001	NONE
US 2001040793	A1	15-11-2001	JP 2001217388 A 10-08-2001
US 6351029	B1	26-02-2002	US 6323060 B1 27-11-2001 TW 506101 B 11-10-2002 WO 0191173 A1 29-11-2001 US 2001035572 A1 01-11-2001 EP 1192658 A1 03-04-2002 JP 2002543618 T 17-12-2002 WO 0067314 A1 09-11-2000 US 6426549 B1 30-07-2002 US 2002048849 A1 25-04-2002
US 2003020153	A1	30-01-2003	WO 03010816 A1 06-02-2003 US 2003025211 A1 06-02-2003
US 2004104470	A1	03-06-2004	WO 2004017399 A1 26-02-2004
US 2001006252	A1	05-07-2001	US 6225688 B1 01-05-2001 US 6121676 A 19-09-2000 US 2003168725 A1 11-09-2003